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tity of tartar, and vice versa. The dose of tartar ought also to vary in proportion to the added sugar, increasing as this increases. In proportioning the sugar, the following general rule may also be taken as a guide. Two pounds of sugar, added to a gallon of a compound containing all the other ingredients requisite to a perfect fermentation, produce a liquor equal in strength to the lightest class of Bourdeaux white wines. Three pounds produce one equal in strength to the wine known by the name of White Hermitage; and from four, if fermented till dry, a wine resembling in strength the strongest Sicilian wines, that of Marsala for example, or the Cape Madeira, is produced, supposing these wines to be free from brandy. Where a fruit already contains sugar, it is obvious that the quantity of added sugar must be diminished in proportion to that which the natural juice may be estimated to contain, if we are desirous of accurate results. If in any case wine is to be left sweet, it is clear that this general rule cannot be applied, since sweetness and strength are, in the same wine and from the same quantities of sugar, incompatible.

A proper degree of fluidity is essential to the operation. If the solution of sugar is concentrated to a certain point, it refuses to enter into fermentation, or undergoes this process with difficulty. For the same reason, its progress is so slow that the result is generally a sweet wine, since the fabricator, accustomed to regulate his processes by time rather than by the changes which the liquor experiences, is apt to conceive it finished before it is well established, and thus to suspend it by the operations of decanting and clarifying before the liquor has suffered all the changes of which in due time it is still capable.

When the juice to be fermented contains too large a proportion of water, the fermentation is equally slow and difficult, but the produce is weak, and runs readily into the acetous fermentation. Thus, weak currant-juice exposed to fermentation, is converted into vinegar, by a gradation so regular that it can scarcely be said to form wine during any part of its progress. If we attend to the common practice of making wine from grapes, that which ought to be the model for all our imitative operations, we shall see that no water is used; but that the whole fluid is composed of the juice of the fruit itself. If we now attend to the common practice, as recommended in our own domestic receipts, we shall find that the juice of the fruit rarely forms more than one-fourth of the whole liquor, and often much less, the proportion of fruit being seldom more than four pounds, including the solid matter it may contain, to eight pounds of water and three or four pounds of sugar; and this proportion is fixed with no regard to the ripeness of the fruit, a circumstance of considerable importance. The consequences resulting from this sparing use of the fruit are important and highly injurious. It is plain that the artificial *must*, thus compounded of water, sugar, and juice, must contain a much less quantity of the vegetable extractive matter and of the native acid, than has been shown to be absolutely essential to a perfect and efficient fermentation. To put this case in a stronger light; let this proportion of juice be still further gradually diminished, and the *must* will soon consist of little else than sugar and water, a compound incapable of forming wine. Let it on the contrary be increased, and a vigorous and perfect fermentation with a produce perfectly vinous will be the result.

Having thus examined the substances to the reactions of which the phenomena of fermentation are owing, we shall proceed to describe these phenomena, and examine into the external circumstances by which that process is influenced. A due knowledge of these is no less necessary than that of the substances engaged in the process, before any rational practices can be adopted for its conduct and regulation.

The temperature is one of the external circumstances which has the greatest share in influencing the act of fermentation. It has been considered, that a temperature about the 54° of Fahrenheit's scale is that which is most favourable to this process. There is, nevertheless, some latitude to be allowed, but in a temperature either very cold or very hot it does not go on at all. By attending to this circumstance we are enabled to regulate the fer-

mentation when it does not proceed regularly, by cooling the fluid to check its too rapid progress, or by warming it, when it proceeds in a languid manner.

The last circumstance to be noticed as influencing the act of fermentation, is the volume of the fermenting fluid. This process is more rapid and more perfect in large than in small vessels. The fermentation will often be entirely completed in the course of a few days in a large vat while in smaller quantities it will require weeks, nay months, before it is perfected. The same materials, for example, will by no means undergo the same changes in equal spaces of time, if they are exposed to fermentation in the quantity of two and of ten gallons.

The management of the fermentation when it has actually commenced, must also be regulated by the views of the artist with regard to the wine he wishes to obtain. This will be easily deduced from the general principles which have been laid down. If it is intended that the wine shall be sweet, the proportion of the water, as well as that of the fruit, to the sugar must be reduced, and the fermentation must be diminished, as far as is consistent with his views, by separating the scum as fast as it rises, and decanting and clarifying. If, on the contrary, the wine is intended to be dry, the proportion of the fruit will be increased, or the scum will be agitated with the liquor by rolling or stirring, so as to protract the fermentation. If the wine is to be brisk, the proportion both of fruit and water will be increased, and the fermentation will not only be carried on in vessels partially closed, but the liquor will be bottled and secured before the fermentation is finished.

The management of the temperature is also easily deduced from the principles before laid down. When the fermentation languishes from deficiency of heat, it is easily augmented by introducing a stove into the apartment where the process is conducted, or by admitting the sun's rays, or lastly, by heating a portion of the fluid to a high temperature and mixing it with the mass. Agitation will readily diffuse an equal temperature throughout the mass, while injurious changes from varying temperature of the surrounding air, may be avoided by protecting the vessels with straw or other bad conductors of heat.

Having thus afforded some idea of the general system which should be pursued in the manufacture of wines, we shall in our next give directions as to the quantities, &c. to be employed in the making of particular descriptions of the article; and to convince our readers that it is not mere theory with us, we may state that we have at present a hogshead of white wine, made in the manner directed above, which is generally taken for foreign growth.

THE HOOPING COUGH.

As there is scarcely a family which this distressing disease does not annoy, at some period or other, the following simple remedies, recommended by a Medical Journal of high character, may not be unacceptable to some portion of our readers.

Emetics administered frequently have been found the most useful of all remedies in whooping cough, for which reason they ought never to be neglected; and as children may easily be deceived by what has no appearance of medicine, a solution of tartarized antimony seems to be the most proper for the occasion. Take tartarized antimony, three grains; spring water, six ounces; simple syrup, two drachms; mix them, and give about one table-spoonful every fifteen minutes or so, until it takes effect, as dangerous consequences might ensue from the medicine happening to operate harshly, and producing much vomiting, which, in some cases, a very small quantity of it is apt to do. Where the patient is grown up to an adult state, an emetic of the wine of antimony, or ipecacuanha, or of oxymel of squills, may be substituted.

A medicine composed of opium, ipecacuanha, and the carbonate of soda, is recommended by Dr. Pearson, to be given in whooping-cough, after the accumulated phlegm has been brought away by an antimonial emetic. He advises it in the following proportions to a child between one and two years, viz.: one drop of the tincture of opium, five

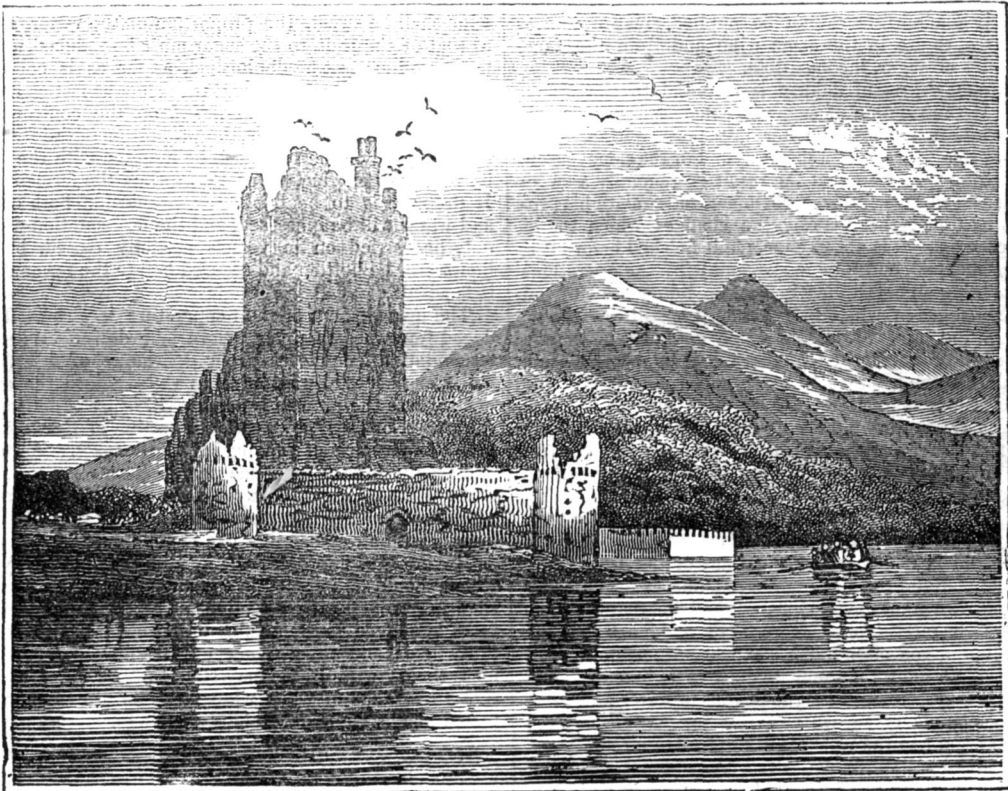
drops of ipecacuanha wine, and two grains of the carbonate of soda; which may be made up into a small draught with syrup and water, and be repeated every fourth hour for several days, taking care to give an opening medicine—calomel and rhubarb—whenever it is required. Dr. Pearson is of opinion that, without the soda, the preparations of ipecacuanha and opium would not be equally efficacious; and was led to employ it by the sour smell of the slimy fluid brought up by vomiting: but he suspects that it has an influence beyond that of correcting acidity.

The tincture of fox-glove is another medicine which has of late been recommended in the whooping-cough. Combining it with opium, might perhaps increase its efficacy. Henbane has likewise been proposed as a remedy in whooping cough. It may be given, combined with tartarized au-

timonial wine, regulating the dose by the age of the patient.

Bathing the feet frequently in warm water has been supposed to afford relief in many cases. A tepid bath is sometimes serviceable.

The failure of bleeding in whooping-cough may very often be attributed to its being resorted to at too late a period, or its being too sparingly used. Where there is much difficulty of breathing, the application of a blister to the chest will be highly proper at the commencement of the disease. It will in general also be necessary to have recourse to gentle laxatives, such as an infusion of senna with manna, &c. In many instances, however, an attention to diet may probably be sufficient to answer the purpose required, and therefore, stewed prunes, roasted apples, &c. may be given, which things children take very readily.



ROSS CASTLE, KILLARNEY.

THE above is another of those remains of antiquity which give interest and effect to the scenery of Killarney. It stands on Ross Island, the largest island on the lower lake; about a mile in length, and entirely covered with underwood, chiefly evergreens. A narrow gut, scarcely navigable for boats, separates it from the shore. The castle stands upon a rock on the land side of the island; it is a fine ruin, consisting of a lofty square building, with embattled parapets, originally enclosed by a curtain wall, having round flankers at each corner, small portions of which, are yet visible. In the interior are several good apartments: it was formerly a royal residence, being the seat of the lords of the lake, who assumed the title of kings. The family of O'Donoghue was the last that bore this title. There are many interesting stories recorded of the great O'Donoghue, the hero of this ancient race, which well accord with the surrounding scenery.

In the year 1652, the castle was valiantly defended by Lord Muskerry, against an English force of 4000 foot and horse, commanded by General Ludlow.

The shores of Ross Island, says Mr. Wright in his guide to the lakes, are beautiful and interesting in the ex-

tre, being deeply indented, and possessing endless variety of commanding promontory, and retiring bay; the rocks along its margin are worn into the most fanciful shapes, for every group of which, the helms-man is supplied with an appropriate appellation. Here lead and copper are to be had in great abundance, and though the working of the mines is discontinued, yet it is rather for want of capital in the proprietors, than for a deficiency of ore. These mines were worked at a very early period, and some of the rude implements used for breaking down the ore, are to be found on the Island; they are large oval stones, quite smooth, and round the centre of each is a mark, evidently caused by the fastening on of a convenient handle; they are called by the country people "Dane hammers," a belief still existing that they were formerly used by those invaders.

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